```
gatagaagag gtcctttata cgtgttaaac atcggagtta catttctttc tgttagcttt 4680

ttaactgctt cctttctttt agaaacaaca tcatggttca tgacaattat aatcgtattt 4740

gttttaggtg ggctttcgtt caccaaaaca gttatatcaa caattgtttc aagtagcttg 4800

aaacagcagg aagctggtgc tggaatgagt ttgcttaact ttaccagctt tttatcagag 4860

ggaacaggta ttgcaattgt aggtggttta ttatccatac ccttacttga tcaaaggttg 4920

ttacctatgg aagttgatca gtcaacttat ctgtatagta atttgttatt actttttca 4980

ggaatcattg tcattagttg gctggttacc ttgaatgtat ataaacattc tcaaagggat 5040

ttctaaatcg ttaagggatc aactttggga gagagttcaa aattgatcct tttttataa 5100

cagttcgaag cggccgcaat tcttgaagac gaaagggcct cgtgatacgc ctattttat 5160

aggttaatgt catgataata atggtttctt agacgtcagg tggcactttt cggggaaatg 5220

tgcgcggaac ccctatttgt ttattttct aaatacattc aaatatgtat ccgctcatga 5280

gacaataacc ctgataaatg cttcaataat attgaaaaag gaagagtatg agtattcaac 5340

atttccgtgt cgcccttatt cccttttttg cggcattttg ccttcctgtt tttgctcacc 5400

cagaaacgct ggtgaaagta aaagatgctg aagatcagtt gggtgcacga gtgggttaca 5460

tcgaactgga tctcaacagc ggtaagatcc ttgagagttt cgccccgaa gaacgttttc 5520

caatgatgag cacttttaaa gttctgctat gtggcgcggt attatcccgt attgacgccg 5580

ggcaagagca actcggtcgc cgcatacact attctcagaa tgacttggtt gagtactcac 5640

cagtcacaga aaagcatctt acggatggca tgacagtaag agaattatgc agtgctgcca 5700

taaccatgag tgataacact gcggccaact tacttctgac aacgatcgga ggaccgaagg 5760

agctaaccgc ttttttgcac aacatggggg atcatgtaac tcgccttgat cgttgggaac 5820

cggagctgaa tgaagccata ccaaacgacg agcgtgacac cacgatgcct gcagcaatgg 5880

caacaacgtt gcgcaaacta ttaactggcg aactacttac tctagcttcc cggcaacaat 5940

taatagactg gatggaggcg gataaagttg caggaccact tctgcgctcg gcccttccgg 6000

ctggctggtt tattgctgat aaatctggag ccggtgagcg tgggtctcgc ggtatcattg 6060

cagcactggg gccagatggt aagccctccc gtatcgtagt tatctacacg acggggagtc 6120

aggcaactat ggatgaacga aatagacaga tcgctgagat aggtgcctca ctgattaagc 6180

attggtaact gtcagaccaa gtttactcat atatacttta gattgattta aaacttcatt 6240

tttaatttaa aaggatctag gtgaagatcc tttttgataa tctcatgacc aaaatccctt 6300

aacgtgagtt ttcgttccac tgagcgtcag accccgtaga aaagatcaaa ggatcttctt 6360

gagatccttt ttttctgcgc gtaatctgct gcttgcaaac aaaaaaacca ccgctaccag 6420
```

```
cggtggtttg tttgccggat caagagctac caactctttt tccgaaggta actggcttca 6480

gcagagcgca gataccaaat actgtccttc tagtgtagcc gtagttaggc caccacttca 6540

agaactctgt agcaccgcct acatacctcg ctctgctaat cctgttacca gtggctgctg 6600

ccagtggcga taagtcgtgt cttaccgggt tggactcaag acgatagtta ccggataagg 6660

cgcagcggtc gggctgaacg gggggttcgt gcacacagcc cagcttggag cgaacgacct 6720

acaccgaact gagatacctа cagcgtgagc tatgagaaag cgccacgctt cccgaaggga 6780

gaaaggcgga caggtatccg gtaagcggca gggtcggaac aggagagcgc acgagggagc 6840

ttccagggg aaacgcctgg tatctttata gtcctgtcgg gtttcgccac ctctgacttg 6900

agcgtcgatt tttgtgatgc tcgtcagggg ggcggagcct atggaaaaac gccagcaacg 6960

cggccttttt acggttcctg gcctttgct ggcctttgc tcacatgttc tttcctgcgt 7020

tatcccctga ttctgtggat aaccgtatta ccgcctttga gtgagctgat accgctcgcc 7080

gcagccgaac gaccgagcgc agcgagtcag tgagcgagga agcggaagag cgcctgatgc 7140

ggtattttct ccttacgcat ctgtgcggta tttcacaccg catatggtgc actctcagta 7200

caatctgctc tgatgccgca tagttaagcc agtatacact ccgctatcgc tacgtgactg 7260

ggtcatggct gcgccccgac acccgccaac acccgctgac gcgccctgac gggcttgtct 7320

gctcccggca tccgcttaca gacaagctgt gaccgtctcc gggagctgca tgtgtcagag 7380

gttttcaccg tcatcaccga aacgcgcgag gcagctgcgg taaagctcat cagcgtggtc 7440

gtgaagcgat tcacagatgt ctgcctgttc atccgcgtcc agctcgttga gtttctccag 7500

aagcgttaat gtctggcttc tgataaagcg ggccatgtta agggcggttt tttcctgttt 7560

ggtcacttga tgcctccgtg taaggggggaa tttctgttca tgggggtaat gataccgatg 7620

aaacgagaga ggatgctcac gatacgggtt actgatgatg aacatgcccg gttactggaa 7680

cgttgtgagg gtaaacaact ggcggtatgg atgcggcggg accagagaaa aatcactcag 7740

ggtcaatgcc agcgcttcgt taatacagat gtaggtgttc cacagggtag ccagcagcat 7800

cctgcgatgc agatccggaa cataatggtg cagggcgctg acttccgcgt ttccagactt 7860

tacgaaacac ggaaaccgaa gaccattcat gttgttgctc aggtcgcaga cgttttgcag 7920

cagcagtcgc ttcacgttcg ctcgcgtatc ggtgattcat tctgctaacc agtaaggcaa 7980

ccccgccagc ctagccgggt cctcaacgac aggagcacga tcatgcgcac ccgtggccag 8040

gacccaacgc tgcccgagat gcgccgcgtg cggctgctgg agatggcgga cgcgatggat 8100

atgttctgcc aagggttggt ttgcgcattc acagttctcc gcaagaattg attggctcca 8160

attcttggag tggtgaatcc gttagcgagg tgccgccggc ttccattcag gtcgaggtgg 8220

cccggctcca tgcaccgcga cgcaacgcgg ggaggcagac aaggtatagg cggcgccta 8280
```

```
caatccatgc caacccgttc catgtgctcg ccgaggcggc ataaatcgcc gtgacgatca 8340

gcggtccagt gatcgaagtt aggctggtaa gagccgcgag cgatccttga agctgtccct 8400

gatggtcgtc atctacctgc ctggacagca tggcctgcaa cgcgggcatc ccgatgccgc 8460

cggaagcgag aagaatcata atggggaagg ccatccagcc tcgcgtcggc ggccgcttcg 8520

tcgaccgaaa cagcagttat aaggcatgaa gctgtccggt ttttgcaaaa gtggctgtga 8580

ctgtaaaaag aaatcgaaaa agaccgtttt gtgtgaaaac ggtctttttg tttcctttta 8640

accaactgcc ataa                                                  8654
```

<210> 78
<211> 8093
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Recombinant
      pAN423 plasmid

<400> 78
```
ggcggccgct cgtcgaccg aaacagcagt tataaggcat gaagctgtcc ggttttttgca 60

aaagtggctg tgactgtaaa aagaaatcga aaaagaccgt tttgtgtgaa aacggtcttt 120

ttgtttcctt ttaaccaact gccataactc gaggcctacc tagcttccaa gaaagatatc 180

ctaacagcac aagagcggaa agatgttttg ttctacatcc agaacaacct ctgctaaaat 240

tcctgaaaaa ttttgcaaaa agttgttgac tttatctaca aggtgtggta taataatctt 300

aacaacagca ggacgctcta gaaaaggagg aatttaaatg tatcgtacga tgatgagcgg 360

caaacttcac agggcaactg ttacggaagc aaacctgaac tatgtgggaa gcattacaat 420

tgatgaagat ctcattgatg ctgtgggaat gcttcctaat gaaaaagtac aaattgtgaa 480

taataataat ggagcacgtc ttgaaacgta tattattcct ggtaaacggg gaagcggcgt 540

catatgctta aacggtgcag ccgcacgcct tgtgcaggaa ggagataagg tcattattat 600

ttcctacaaa atgatgtctg atcaagaagc ggcaagccat gagccgaaag tggctgttct 660

gaatgatcaa aacaaaattg aacaaatgct ggggaacgaa ccagcccgta caatttttgta 720

aaggatcctg ttttggcgga tgagagaaga ttttcagcct gatacagatt aaatcagaac 780

gcagaagcgg tctgataaaa cagaatttgc ctggcggcag tagcgcggtg gtcccacctg 840

accccatgcc gaactcagaa gtgaaacgcc gtagcgccga tggtagtgtg gggtctcccc 900

atgcgagagt agggaactgc caggcatcaa ataaaacgaa aggctcagtc gaaagactgg 960

gcctttcgtt ttatctgttg tttgtcggtg aacgctctcc tgagtaggac aaatccgccg 1020

ggagcggatt tgaacgttgc gaagcaacgg cccggagggt ggcgggcagg acgcccgcca 1080
```